Paper for Consideration by NIPWG

[S-128 Catalogue of nautical products]

Submitted by:	Republic of Korea (KHOA)
Executive Summary:	This paper describes the progress of revising the S-128 Application schema and test activities.
Related Documents:	NIPWG4-19.1 Review of comments on S-128 Application Schema NIPWG3-29.1 Results of designing Application Schema for S-128 Catalogue of Nautical products NIPWG2-29.1 Status of S-128 Product Specification for Catalogue of Nautical Products NIPWG1-21.2 Proposal of a new S-10X Prodspec on catalogue of charts and publications
Related Projects:	KHOA S-100 Test bed project

Introduction / Background

KHOA has promoted a research project to cope with S-100 Test bed of developing a standard for S-128 Catalogue of nautical products. KHOA conducted again to improve S-128 Application Schema following the review comments of NIPWG4 and NGA reviewed the schema. This paper is a report of results about S-128 Application schema improvements and test by KHOA.

Analysis/Discussion

Summary of S-128 Application Schema Improvements

KHOA decided to revise the S-128 Application schema according to the results of NIPWG4 discussions. CatalogueOfNauticalProduct(feature type) was defined for catalogues of nautical products information and defined ContactDetails(information type) for related information. Nautical products include various of information like paper chart, ENC, e-MIO, e-Navigation services and CatalogueElements(feature type-abstract) was defined for each product's common attributes.

AbstractChartProducts(feature type-abstract) was defined for common attributes for paper chart and ENC and ElectronicChart(feature type) and PaperChart(feature type) are designed to inherit the AbstractChartProducts. A nautical chart like paper chart and GIS map will use PaperChart and other types like ENC, digital chart, GIS data will use ElectronicChart. Nautical products that are not map type like nautical publications(navigational chart, list of lights), e-Navigation services can be represented by the NauticalProducts(feature type). Improvement results of Application schema for S-128 Catalogue of nautical products was summarized like Fig 1.

The improved version of S-128 Application schema was designed as two Abstract Feature type, four Feature type and one Information type. KHOA held a seminar in Daejeon, Korea on August 28, 2017 for reviewing the new version of S-128 Application schema. This seminar was proceeded in conjunction with the S-100 Interoperability workshop, attend by research project team, Yong baek, Eivind mong attend. The research team reviewed the new version of S-128 Application schema and had a discussion.

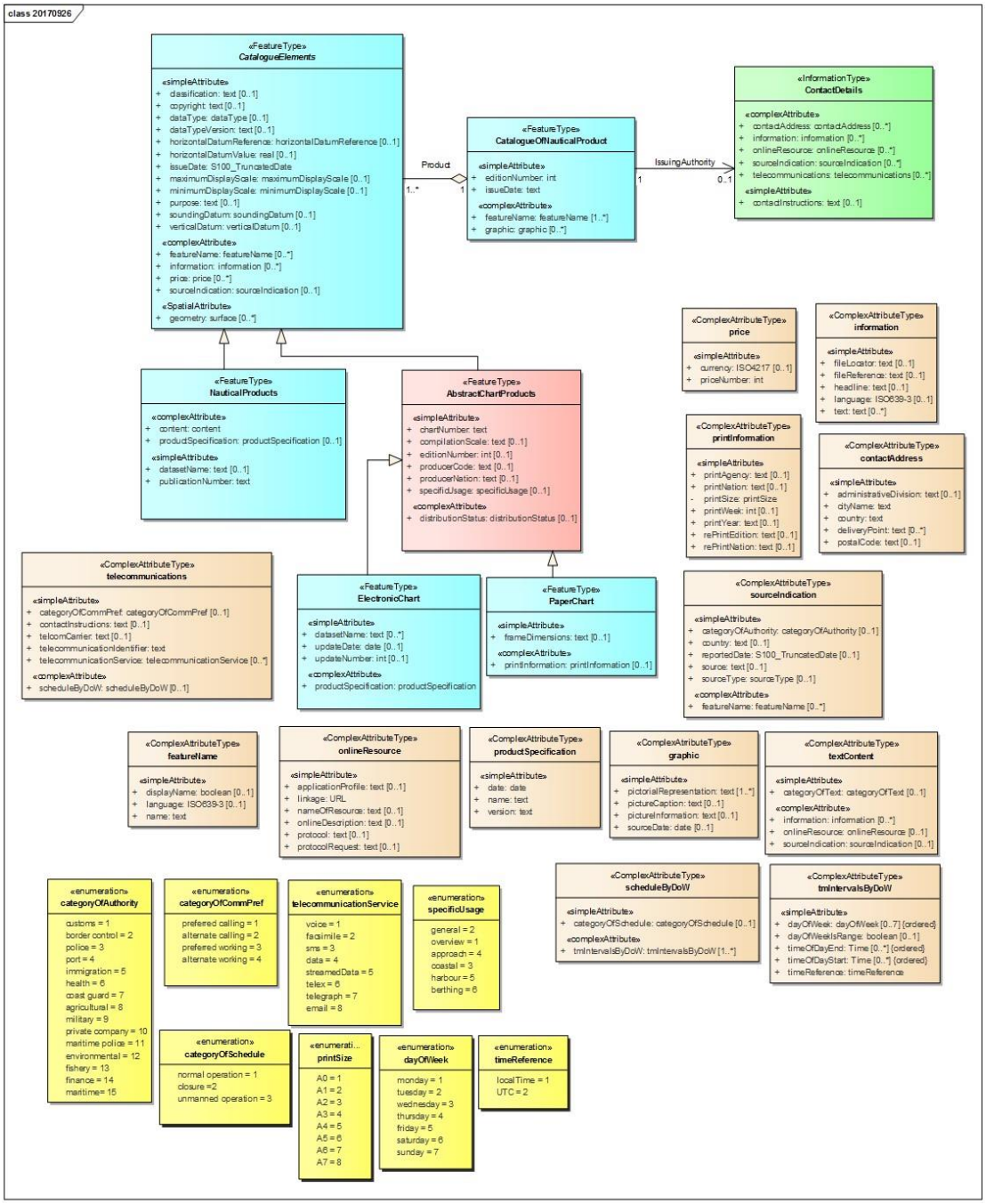

Fig. 1 Draft of S-128 Application schema improvements

Fig. 2 Seminar for new S-128 Application schema review

Note: FOR REASONS OF ECONOMY, DELEGATES ARE KINDLY REQUESTED TO BRING THEIR OWN COPIES OF THE DOCUMENTS TO THE MEETING

Comments from NGA

Based on the results of the NIPWG4 discussions, the S128 Application Scheme improved by the KHOA was submitted to the NGA through the NIPWG Chair. The NGA returned the following comments.

1. Naming convention for Print Size in the enumeration has not been followed (space used).

2. ChartType (Int, Fishery, Special, etc.) enumeration was removed which leaves many of the questions from NIPWG4 unanswered. Recommend open code list that allows countries to input the chart type.

3. POD(Print On Demand) Option was not added under printInformation as requested.

4. ProductTypeCode (Chart, Radio Aids, List of Lights, etc.) enumeration was also removed from the diagram. Was there a reason for it being removed and not replaced?

5. CatalogueElements, CatalogueOfNauticalProduct, NauticalProducts, AbstractChartProducts, ElectronicChart and PaperChart all need to become InformationTypes since they do not reflect a true real world object

Comments from 1-4 has been reflected to S-128 Application schema. In case of comment No. 5, navigation products such as paper charts, and electronic charts as navigation publications are seems to have a geographical range. The research team of KHOA recommends to have a discussion in NIPWG5 about this topic as these information should be defined as feature type.

Results of S-128 Application Schema test

KHOA is conducting an S-100 test bed study, which includes S-10X TDS production and S-100 Viewer development. The S-100 Viewer was developed to process and represent the S-10X TDS according to the S-100 Portrayal process. The KHOA team produced the S-128 GML Schema design and GML TDS to test the S-128 Application schema, and generate the draft version of feature catalogue and portrayal catalogue for the S-100 Viewer representation.

The GML Schema for S-128 data is designed based on S-128 MPA and S-123 MRS GML Schema. ROK conducted the creation of S-128 TDS through paper chart, ENC, navigational chart. The results of S-128 GML Schema design and TDS creation are shown in Fig. Same as 3

Fig. 3 Results of S-128 GML Schema and TDS creation

Creation of FC and PC was required to apply S-128 TDS results to S-100 Viewer. The research team of KHOA generated a draft S-128 FC and PC through FCB and PCB of S-100 test bed research.

Fig. 4 Results of draft S-128 FC, PC creation

The portrayal catalogue defines the screen representation method for each feature type included in the S-128 Application schema. It is required to define the NauticalProducts, EletronicChart, and PaperChart feature types included in the S-128 Application schema. KHOA has defined a simple symbol portrayal rules for area and text for the publication area and identification number of navigation products.

Fig. 5 shows how S-128 TDS is works in the S-100 Viewer, and how the data set according to the S-128 product specification is used in the S-100 S/W system with the S-101 ENC data by S-100 Viewer through S-128 TDS. Fig. 6 is a results of application S-128 TDS to S-100 Viewer.

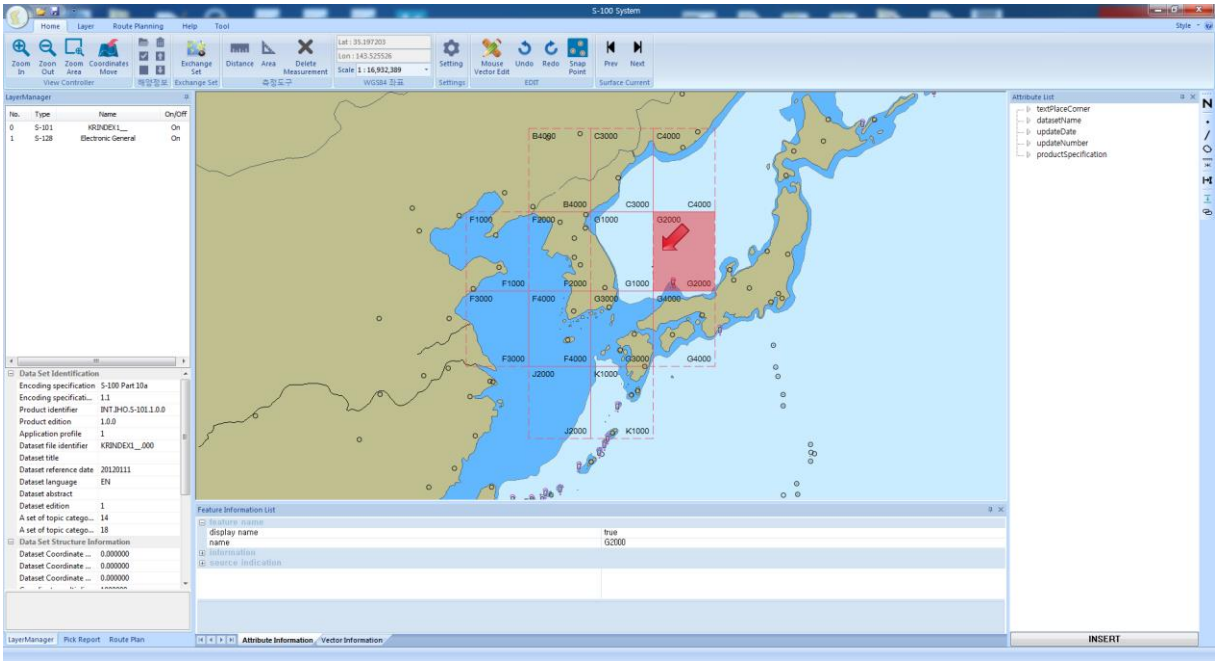

Fig. 5 Result of applying S-128 TDS to ENC

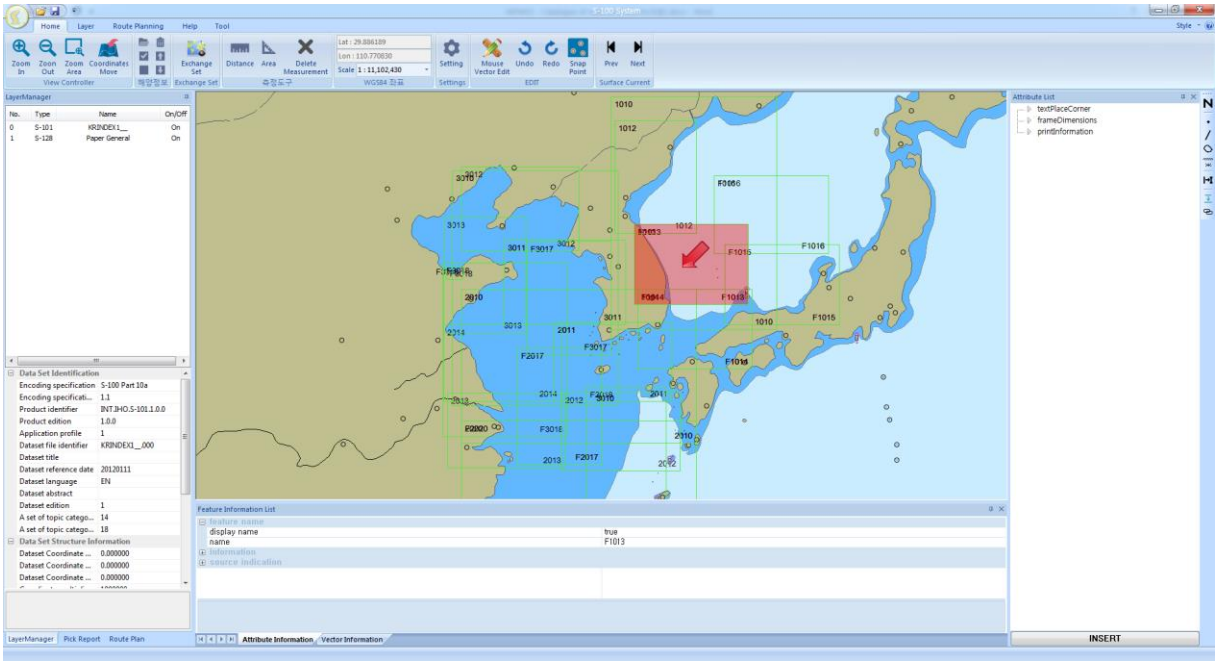

Fig. 6 Result of applying S-128 TDS to paper chart

Conclusions

The KHOA research team has revised the S-128 Application schema based on the results of NIPWG4 discussions and held a review workshop on S-128 Application schema revision results and received NGA review comments. A S-128 TDS demonstration and application was proceed by using KHOA's S-100 Testbed tools(S-100 Viewer, FCB, PCB) to validate the S-128 Application schema and check how the data set is utilized with the S-101 ENC in the S-100 S/W environment.

Recommendations

The research team of KHOA experienced the improvement of S-128 Application schema and reviewed by seminar and NGA. The new version of S-129 Application schema is considered to be stable for the development of the product specification. The research team recommends to start developing product specification as S-128 Application schema can be continuously discussed and modified during the development period.

Action Required of NIPWG

The NIPWG5 is invited to:

a. Note and discuss the paper.

b. Support the S-128 development activities of ROK

c. Decide on any future actions